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MINERAL INDUSTRY SURVEYS

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MANGANESE IN JANUARY 1997

In January, reported consumption of manganese ore containing 35% or more manganese, exclusive of that at iron and steel plants, was 38,800 metric tons, which was a slight increase compared with that of the previous month, according to the U.S. Geological Survey. This figure increases to 43,300 when estimates for annual respondents are added on the basis of 1994 data. Corresponding industry stocks of ore at the end of the month were estimated as 339,000 tons, which includes an estimate for annual respondents based on 1994 data. This was also a slight increase in comparison with the corresponding figure for stocks at the end of December. (Data for the most recent 13 months are graphed on page 3.)

This report contains data on domestic consumption and stocks of manganese ferroalloys and metals for the October through December quarter of 1996 and cumulative preliminary data for all of 1996 (tables 8 and 9, respectively). In comparison with similar data for 1995, the data suggest some shifting from the use of ferromanganese to silicomanganese by steelmakers.

Note

Early availability of foreign trade statistics via FaxBack: The December 1996 trade data appearing in this report were placed on FaxBack in preliminary form as of February 25. The FaxBack document number for these preliminary tables was 420212.

Foreign trade data for January will appear in a subsequent report. The data for December 1996 tabulated in this report indicate that as of December the quantity of imports exceeded that for all of 1995 for ore containing 47% or more manganese, silicomanganese, manganese dioxide, and manganese metal--other. Overall imports of metal were the greatest since May 1995. Among export quantities, those of silicomanganese were the least since July 1991. The total for metal rose enough to exceed that for all of 1995 by 1 ton.

Preliminary totals for foreign trade in 1996 as given by the tables in this report indicate that the quantity of silicomanganese imports reached a new record total. This may also have been the case for medium-carbon ferromanganese, depending on the validity of the December statistics for receipts from Norway. In terms of contained manganese, total imports were the greatest since 1989 and total exports the greatest since 1991.

The Defense Logistics Agency (DLA), U.S. Department of Defense, reported for January cash disposals from the National Defense Stockpile that consisted of 1,588 tons of natural battery-grade ore and 47,971 tons of metallurgical-grade ore. All disposals resulted from modifications of existing contracts except that disposals of metallurgical-grade ore included 1,814 tons sold to Cameron Chemical Inc., Chesapeake, VA. **Later action:** On February 13, DLA announced revisions to its Annual Materials Plans (AMP) for fiscal years 1997 and 1998. Revisions to the Fiscal Year 1997 AMP did not include any changes for manganese materials. Compared with the Fiscal Year 1997 AMP, the proposed Fiscal Year 1998 AMP contained lower maximum sales quantities for natural battery-grade ore, 18,144 vs. 54,431 tons, and metallurgical-grade ore, 226,796 vs. 362,874 tons. Maximum sales quantities remained the same for other manganese materials, in tons: synthetic manganese dioxide, 2,732; chemical-grade ore, 36,287; ferromanganese, 45,359; and electrolytic metal, 1,814. Provided Congress makes no changes in it, this Fiscal Year 1998 AMP will become effective October 1.

In Saudi Arabia, all four furnaces at the new plant of Gulf Ferro Alloys Co. (SABAYEK) were reported to have been started up, so that production of silicomanganese, ferrosilicon, and silicon metal was underway.[1] According to a report given at INFACON in 1995, one furnace at this plant was planned to

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be able to produce either silicomanganese or ferromanganese and another either silicomanganese or ferrosilicon, for an overall annual capacity for silicomanganese of 30,000 tons. All furnaces were rated at 27 MVA.[2] The SABAYEK plant is located in the Jubail Industrial City, which is near Saffaniyah, south of Kuwait, on the Persian Gulf.

Roskill Information Services Ltd. has published its eighth edition of "The Economics of Manganese." This report discusses the manganese industry worldwide in 426 pages of text and includes an appendix of foreign trade data. The publisher's mailing address is 2 Clapham Road, London SW9 0JA, United Kingdom; the fax number is +44 171 793 0008 and the Internet address is http://www.roskill.co.uk

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[1]Ryan's Notes. V. 3, No. 6, Feb. 10, 1997, p. 1.

[2]Al Mokrin, Z. Ferroalloys Products in the Gulf Region. Paper in INFACON 7, ed. by J. K. Tuset, H. Tveit, and I. G. Page (Proc. 7th Int. Ferroalloys Congr., Trondheim, Norway, June 11-14, 1995). The Norwegian Ferroalloy Research Organization (Trondheim), 1995, pp. 641-645.

TABLE 1
SELECTED U.S. FOREIGN TRADE IN MANGANESE 1/

(Metric tons, manganese content) 2/

	Imports for consumption			Exports		
	Ore and dioxide	Ferroalloy and metal	Total	Ore	Ferroalloy and metal	Total
1995:						
December	36,800	50,900	87,700	707	1,310	2,020
January-December	203,000	454,000	657,000	7,690	19,500	27,200
1996:						
January	8,860 3/	47,100 3/	56,000	386	1,540	1,930
February	1,410 3/	36,200 3/	37,600	1,620	1,670	3,290
March	14,400 3/	46,900 3/	61,300	435	1,610	2,050
April	32,500	61,400 3/	93,900	1,220	1,760	2,980
May	20,400 3/	46,800	67,200	2,240	1,630	3,870
June	26,300 3/	45,000 3/	71,300	2,550	1,230	3,780
July	18,100 3/	19,500	37,700	1,210	841	2,050
August	7,700 3/	55,500 3/	63,200	2,080	1,210	3,290
September	5,030 3/	33,400 3/	38,400	1,300	1,110	2,410
October	51,500 3/	34,200	85,700	912	1,280	2,190
November	27,500 3/	50,900 3/	78,400	419	1,940	2,350
December	10,000 3/	38,500 3/	48,600	1,470	1,040	2,510
Total	224,000	516,000	739,000	15,800	16,900	32,700

1/ Data are rounded to three significant digits; may not add to totals shown.
2/ As reported except as estimated for imports of manganese dioxide and manganese waste and scrap and for exports from gross weights.
3/ All or part of these data have been referred to the Bureau of the Census for verification.

Source: Bureau of the Census.

TABLE 2
U.S. IMPORTS FOR CONSUMPTION OF SILICOMANGANESE IN DECEMBER 1996 1/

(Metric tons)

				Year to date		
Source	Gross weight	Mn content	Customs value	Gross weight	Mn content	Customs value
Argentina	--	--	--	7,490	4,870	$4,910,000
Australia	4,840	3,240	$2,110,000	50,300	33,700	29,200,000
France	--	--	--	20,900	13,800	11,100,000
Georgia	--	--	--	1,260	884	701,000
India	3,100	2,070	1,420,000	47,400	31,200	27,000,000
Kazakstan	--	--	--	5,590	3,010	3,050,000
Macedonia	--	--	--	11,000	7,460	4,910,000
Mexico	1,500	983	698,000	23,600	15,400	13,300,000
Norway	426	264	401,000	10,500	6,390	10,200,000
Poland	--	--	--	3,040	2,100	2,050,000
Romania	--	--	--	12,400	8,290	6,790,000
Russia	--	--	--	8,330	4,040	3,790,000
South Africa	6,790	4,470	3,430,000	93,900	63,300	54,600,000
Spain	--	--	--	2,800	1,750	2,560,000
Venezuela	6,500	4,290	2,910,000	24,500	15,600	13,800,000
Total	23,200	15,300	11,000,000	323,000	212,000	188,000,000
Total, general imports	23,200	15,300	11,000,000	325,000	213,000	189,000,000

1/ Data are rounded to three significant digits; may not add to totals shown.

Source: Bureau of the Census.

TABLE 3
U.S. IMPORTS FOR CONSUMPTION OF FERROMANGANESE IN DECEMBER 1996 1/

(Metric tons)

Source	Gross weight	Mn content	Customs value	Year to date Gross weight	Year to date Mn content	Year to date Customs value
Low carbon:						
Bangladesh	--	--	--	28	24	$16,700
Belgium	--	--	--	33	27	19,500
Brazil	--	--	--	20	17	39,000
Canada	--	--	--	42	34	53,000
Italy	85	76	$135,000	5,630	5,050	9,110,000
Japan	98	83	138,000	2,480	2,070	2,880,000
Norway	--	--	--	1,070	883	1,240,000
South Africa	20	18	43,200	2,240	2,060	3,910,000
Total, low carbon	203	177	316,000	11,500	10,200	17,300,000
Total, general imports of low carbon	203	177	316,000	11,600	10,200	17,300,000
Medium carbon, 1%-2% C:						
Brazil	1	1	2,170	5,210	4,170	4,340,000
China	--	--	--	11,700	9,440	9,300,000
France	--	--	--	4,200	3,430	3,280,000
Japan	--	--	--	24,600	19,800	19,500,000
Mexico	2,300	1,840	1,730,000	24,400	19,600	19,700,000
Norway	12,000 2/	983 2/	1,050,000	14,500	3,060	3,110,000
South Africa	--	--	--	4,230	3,390	3,710,000
Total, m.c., 1%-2% C	14,300	2,830	2,780,000	88,900	62,900	62,900,000
Total, general imports of m.c., 1%-2% C	14,300	2,830	2,780,000	88,900	62,900	62,900,000
High carbon:						
Australia	--	--	--	33,900	25,500	13,500,000
Brazil	3,360	2,590	1,270,000	31,200	23,600	12,700,000
France	10,600	8,360	4,890,000	93,400	73,400	43,300,000
Mexico	--	--	--	6	5	3,650
Norway	--	--	--	56	45	66,500
South Africa	10,300	8,080	4,530,000	125,000	97,200	56,100,000
Total, high carbon	24,200	19,000	10,700,000	284,000	220,000	126,000,000
Total, general imports of high carbon	24,200	19,000	10,700,000	284,000	220,000	126,000,000
Grand total	38,700	22,000	13,800,000	384,000	293,000	206,000,000
Grand total, general imports	38,700	22,000	13,800,000	384,000	293,000	206,000,000

1/ Data are rounded to three significant digits; may not add to totals shown.
2/ All or part of these data have been referred to the Bureau of the Census for verification.

Source: Bureau of the Census.

TABLE 4
U.S. IMPORTS 1/ OF MANGANESE ORE (20% OR MORE MN) IN DECEMBER 1996 2/

(Metric tons)

Source	20% - 47% Mn Gross weight	20% - 47% Mn Mn content	47% or more Mn Gross weight	47% or more Mn Mn content	Total Gross weight	Total Mn content
Mexico	1,520	575	400	271 3/	1,920	846
South Africa	--	--	16,500	7,910	16,500	7,910
Total	1,520	575	16,900	8,180	18,400	8,750
Year to date:						
Australia	--	--	96,000	48,900	96,000	48,900
Belgium	--	--	9	8	9	8
Brazil	18,700	4,640	--	--	18,700	4,640
Gabon	--	--	258,000	114,000	258,000	114,000
Mexico	42,100	15,600	2,730	1,830	44,800	17,400
Morocco	--	--	18	9	18	6
South Africa	--	--	43,500	20,800	43,500	20,800
United Kingdom	--	--	60	52	60	52
Total	60,800	20,300	401,000	186,000	462,000	206,000

1/ Quantities for general imports and imports for consumption are identical.
2/ Data are rounded to three significant digits; may not add to totals shown.
3/ All or part of these data have been referred to the Bureau of the Census for verification.

Source: Bureau of the Census.

TABLE 5
U.S. IMPORTS FOR CONSUMPTION OF MANGANESE DIOXIDE AND MANGANESE METAL IN DECEMBER 1996 1/

(Metric tons, gross weight)

	Manganese dioxide				Manganese metal			
			Year to date		Unwrought		Other	
Source	Quantity	Customs value	Quantity	Customs value	Quantity	Year to date	Quantity	Year to date
Australia	1,430	$1,980,000	19,500	$27,400,000	--	--	--	--
Austria	--	--	2	4,080	--	--	--	--
Belgium	64	101,000	967	1,670,000	--	--	--	30
Brazil	--	--	254	349,000	--	--	--	--
Canada	--	--	5	7,940	--	--	--	9
China	--	--	34	38,700	183	1,100	40	40
France	--	--	(2/)	2,860	--	--	11	102
Germany	18	28,800	113	471,000	--	20	8	169
India	--	--	16	23,000	--	--	--	--
Ireland	454	626,000	6,810	9,510,000	--	--	--	--
Italy	--	--	--	--	--	--	--	(2/)
Japan	--	--	13	37,900	--	--	--	--
Mexico	--	--	4	6,480	--	--	3	3
Russia	--	--	--	--	--	3	--	--
South Africa	171	235,000	801	1,130,000	835	8,480	--	335
Ukraine	--	--	--	--	100	524	--	--
United Kingdom	--	--	375	594,000	--	--	--	152
Total	2,140	2,970,000	28,900	41,300,000	1,120	10,100	61	841
Total, general imports	2,100	2,910,000	28,900	41,300,000	1,120	10,600	61	841

1/ Data are rounded to three significant digits; may not add to totals shown.
2/ Less than 1/2 unit.

Note: Imports for consumption of metallic manganese waste and scrap totaled 18 tons, all of which was from Mexico, to give a year to date total of 329 tons.

Source: Bureau of the Census.

TABLE 6
U.S. EXPORTS OF MANGANESE ORE (20% OR MORE MN), FERROMANGANESE,
SILICOMANGANESE, AND MANGANESE METAL BY COUNTRIES OF DESTINATION IN DECEMBER 1996 1/

(Metric tons, gross weight)

	Manganese ore		Ferromanganese, 2% or less C		Silicomanganese		Manganese metal 2/	
	December	Year to date	December	Year to date	December	Year to date	December	Year to date
Australia	--	142	--	5	--	2	--	--
Belgium	--	3,410	--	--	--	--	--	544
Bolivia	--	3	--	--	--	--	--	--
Brazil	--	2,290	--	12	--	9	37	83
Canada	480	5,800	659	6,300	104	4,810	55	1,030
China	--	5,620	--	--	--	--	--	--
Colombia	--	--	--	31	--	--	--	3
El Salvador	--	354	--	--	--	--	--	--
France	716	2,710	--	94	--	--	--	348
Germany	--	478	--	--	--	--	--	95
Hong Kong	--	--	--	6	--	--	1	7
India	--	153	--	--	--	--	--	41
Indonesia	--	--	--	--	--	--	--	2
Italy	--	1,930	--	--	--	--	8	24
Japan	--	2,860	--	--	--	--	98	1,020
Korea, Republic of	--	519	--	--	--	--	--	311
Mexico	--	130	21	212	--	306	11	315
Netherlands	1,690	1,690	--	--	--	141	18	470
Pakistan	--	--	--	--	--	--	--	(3/)
Philippines	63	63	--	--	--	--	--	--
Saudi Arabia	--	--	--	--	--	--	--	1
Sweden	--	3,380	--	--	--	--	15	193
Taiwan	--	--	--	--	--	--	--	53
Trinidad and Tobago	--	159	--	--	--	--	--	--
United Kingdom	--	(3/)	--	13	--	--	131	1,100
Venezuela	--	--	--	14	--	--	--	--
Total	2,950	31,700	680	6,680	104	5,270	375	5,640

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes manganese-aluminum, some other alloys, and waste and scrap.

3/ Less than 1/2 unit.

Note: Exports of ferromanganese with more than 2% carbon totaled 71 tons, of which 65 tons went to Canada and 6 tons went to Mexico, to give a year to date total of 3,120 tons.

Source: Bureau of the Census.

TABLE 7
U.S. FOREIGN TRADE IN SELECTED MANGANESE CHEMICALS IN DECEMBER 1996, BY CLASS 1/

Class	Gross weight (metric tons)	Value 3/ (thousands)	Principal sources and destinations: gross weight (metric tons); value (thousands) 3/	Year to date p/ 2/ Gross weight (metric tons)	Year to date p/ 2/ Value 3/ (thousands)	Year to date p/ 2/ Principal sources and destinations: gross weight (metric tons); value (thousands) 3/
Imports for consumption:						
Manganese oxides other than dioxide	76	$135	Norway 40; $27	1,060	$2,460	Japan 416; $1,260
Sulfates, basket category, including manganese sulfate	2,540	1,380	Mexico 2,190; $1,030	28,400	15,800	Mexico 19,500; $9,160
Potassium permanganate	97	190	Spain 40; $95	1,460	2,900	Czech Republic 631; $1,190
Manganites, manganates, and other permanganates	--	--	--	28	100	Canada 27; $83
Exports:						
Manganese dioxide	260	404	Canada 86; $44	3,400	3,840	Canada 1,710; $756
Manganese oxides other than dioxide	1,810	1,190	Mexico 1,090; $488	9,320	9,350	Canada 3,460; $1,560
Sulfates, basket category, including manganese sulfate	1,800	1,070	Canada 1,270; $526	21,900	14,100	Canada 17,400; $6,060
Potassium permanganate	111	237	Germany 62; $109	612	1,340	Germany 261; $559
Manganites, manganates, and other permanganates	15	68	Chile 10: $48	215	1,180	Germany 96; $496

p/ Preliminary.
1/ Data are rounded to three significant digits.
2/ May include revisions to previous months' data.
3/ For imports, Customs value; for exports, f.a.s. value.

Source: Bureau of the Census.

TABLE 8
U.S. CONSUMPTION, BY END USE, AND INDUSTRY STOCKS OF
MANGANESE FERROALLOYS AND METAL IN OCTOBER THROUGH DECEMBER 1996 1/

(Metric tons, gross weight)

End use	Ferromanganese: High carbon	Ferromanganese: Medium and low carbon	Ferromanganese: Total	Silico-manganese	Manganese metal
Steel:					
Carbon	46,500	16,500	63,000	21,500	442
Stainless and heat-resisting	2,830	34	2,860	1,470	237
Full alloy	4,550	1,260	5,810	6,320	(2/)
High-strength, low-alloy	4,910	1,020	5,930	2,010	(2/)
Unspecified 3/	102	(4/)	102	76	91
Total steel	58,900	18,800	77,700	31,400	770
Cast irons	1,400	98	1,500	100	--
Superalloys	(4/)	--	(4/)	--	31
Alloys (excluding alloy steels and superalloys)	(4/)	(4/)	(4/)	W	4,330
Miscellaneous and unspecified	134	46	180	W	(5/)
Total consumption, end of period	60,500	18,900	79,400	31,500	5,130
Average daily consumption rate, tons per day	657	206	863	343	56
Total consumption, year to date	235,000	77,100	312,000	121,000 6/	20,700
Stocks, December 31: consumers and producers	18,200	12,300	30,400	6,540	3,530

W Withheld to avoid disclosing company proprietary data.

1/ Data are rounded to three siginificant digits; may not add to totals shown.

2/ Withheld to avoid disclosing company proprietary data; included in "Steel: Unspecified."

3/ Includes electrical and tool steel, and items indicated by (2/).

4/ Withheld to avoid disclosing company proprietary data; included in "Miscellaneous and unspecified."

5/ Withheld to avoid disclosing company proprietary data; included in "Alloys (excluding alloy steels and superalloys)."

6/ Internal evaluation indicates that silicomanganese consumption is considerably understated.

TABLE 9
U.S. CONSUMPTION, BY END USE, AND INDUSTRY STOCKS OF
MANGANESE FERROALLOYS AND METAL IN JANUARY THROUGH DECEMBER 1996 1/ 2/

(Metric tons, gross weight)

End use	Ferromanganese: High carbon	Ferromanganese: Medium and low carbon	Ferromanganese: Total	Silico-manganese	Manganese metal
Steel:					
Carbon	178,000	67,100	246,000	81,100	1,780
Stainless and heat-resisting	11,800	154	11,900	6,010	1,460
Full alloy	19,200	5,250	24,500	25,200	(3/)
High-strength, low-alloy	18,600	4,040	22,700	8,160	(3/)
Unspecified 3/	328	(5/)	328	243	377
Total steel	228,000	76,600	305,000	121,000	3,620
Cast irons	6,240	426	6,660	427	--
Superalloys	(5/)	--	(5/)	--	126
Alloys (excluding alloy steels and superalloys)	(5/)	(5/)	(5/)	W	17,000
Miscellaneous and unspecified	534	160	694	W	(6/)
Total consumption, end of period	235,000	77,100	312,000	121,000 7/	20,700
Average daily consumption rate, tons per day	642	211	853	331	58
Stocks, December 31: consumers and producers	18,200	12,300	30,400	6,540	3,530

W Withheld to avoid disclosing company proprietary data.

1/ Cumulative preliminary data, based on monthly respondents only. Inclusion of data for annual respondents is expected to produce larger final totals for consumption of the respective materials when given in the forthcoming Annual Mineral Industry Survey for Manganese. For 1995 data, final totals were greater than preliminary totals by about 8% for ferromanganese, 16% for silicomanganese, and 19% for manganese metal.

2/ Data are rounded to three significant digits; may not add to totals shown.

3/ Withheld to avoid disclosing company proprietary data; included in "Steel: Unspecified."

4/ Includes electrical and tool steel, and items indicated by (3/).

5/ Withheld to avoid disclosing company proprietary data; included in "Miscellaneous and unspecified."

6/ Withheld to avoid disclosing company proprietary data; included in "Alloys (excluding alloy steels and superalloys)."

7/ Internal evaluation indicates that silicomanganese consumption is considerably understated.